

**Abstract**

The invention relates to a method and an electronic measuring device for detecting a process variable connectable to a two-wire line (101) for providing the supply energy and for digital communication with a process control, and a method for operating such a measuring device. An inventive measuring device comprises a sensor means (114, 115, 123, 124; 314, 315, 323, 324) for measuring the process variable, a controlling device (117; 317) for controlling components of the measuring device, a voltage measuring device (116; 316) for measuring the supply voltage applied through the two-wire line (101), and a current control unit (122; 322) by means of which the current for supplying the measuring devices can be modified in a temporally appropriate manner as a function of the supply voltage measured by the voltage measuring device (9; 316).